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The following comments are in response to the United States Environmental Protection Agency's (EPA's) request for stakeholder input regarding the management of hazardous waste in Research and/or academic laboratories.

General Comment - Rule Applicability

During EPA's public stakeholder meeting regarding hazardous waste management in Research and/or Academic settings EPA solicited comments regarding the applicability of any proposed rule changes. We would like to encourage the EPA to include industrial research and development (R&D) centers within any proposed rule changes. These industrial R&D centers face many of the same challenges that Colleges and Universities do in managing hazardous waste. Most industrial R&D centers are decentralized organizations by design and include numerous laboratories encompassing multiple scientific and engineering disciplines under one campus-like setting.

In doing so we would encourage the EPA to base applicability on the facility's overall corporate purpose (i.e. research and development) and not to design rules that would only apply to "laboratory space". Most R&D centers include pilot lines that are also by design extremely flexible and at times run by multiple Scientists and Technicians. If the EPA were to develop separate rules for laboratories and not include pilot lines at R&D centers the waste management burden would actually increase. The rationale behind this statement is that with Scientists and Technicians running both laboratory experiments and pilot line operations they would essentially need to understand two sets of rules if pilot lines were excluded. Therefore by stating in the applicability of any proposed rule changes that a facility whose general corporate purpose is research and development all processes that generate hazardous waste including pilot lines, maintenance activities, etc should be handled under the new laboratory specific rules.

This regulatory structure would still ensure proper handling and disposal of waste while streamlining the management of waste at these facilities and reducing the overall waste management costs with no adverse affect to human health and the environment.

In response to EPA's specific questions regarding hazardous waste determination and satellite accumulation areas the following comments are provided for EPA's consideration.

Question: *When should the hazardous waste determination be made in a laboratory setting ? Where should the hazardous waste determination be made (e.g. on the bench or in the 90 to 180 day storage area) ?*

Comment: The hazardous waste determination is currently made at the point of generation which is consistent with the existing State and Federal regulatory programs. The determination would be best made at the 90 or 180 day accumulation area by environmental compliance specialists rather than by research scientists or technicians. In a research and development facility one persons waste may be another's raw material. By allowing the waste determination to be made at the 90 or 180 day accumulation area, by properly trained personnel, waste volumes may actually be decreased. This may occur because by centralizing the determination there is now a single focal point that can sort and identify materials for re-use and properly classify waste in accordance with the RCRA requirements.

In addition in a research and development setting the variety of waste streams that are generated is significant and often requires analytical testing for proper waste stream classification. In instances such as this it is more beneficial to have properly trained personnel obtain the sample, determine the proper analytical methods, and secure the waste in the 90 or 180-day accumulation area rather than to have the generator (i.e. the researcher) test the material and make the final waste determination and classification. This would alleviate the need to maintain the waste in the satellite accumulation area until the analytical results were known, therefore increasing protection to human health and the environment.

Question: *What training is needed for lab personnel concerning hazardous waste determinations (e.g. full RCRA training or training that is made specific to chemical management duties) ?*

Comment: We fully support the concept that laboratory personnel training should be limited to proper management of waste and not necessarily full RCRA training. The training for laboratory personnel should include emergency response (what to do at your facility in the event of a release ?) and how to properly dispose of waste in accordance with the specific facility's policies and procedures (not RCRA disposal requirements). The personnel involved in the waste determinations in the 90 or 180 day accumulation areas should indeed have the full RCRA training and understand all of the applicable waste disposal requirements. This would not result in any adverse impact to human health or the environment because chemicals are still properly managed within the laboratory setting in accordance with best laboratory practices. The EPA should remember that personnel within an industrial research and development center are highly educated and trained personnel many, if not most, with doctorate degrees.

In addition EPA should not mandate any additional training regarding chemical management duties in a laboratory setting. The Occupational Safety and Health Administration (OSHA) currently requires that all employees in a laboratory setting undergo training consistent with 29 CFR 1910.1450 *Occupational Exposure to Hazardous Chemicals in Laboratories*. This training in addition to the above proposed waste training should be sufficient chemical and waste training for employees working in laboratories.

Question: *How should waste be labeled so it can be appropriately managed as hazardous waste (e.g. the words “hazardous waste” or a detailed chemical description) ?*

Comment: Hazardous waste labeling should remain consistent with the current regulations. We do not support changing the labeling requirements for laboratory facilities. The words “Hazardous waste” or a detailed chemical description should be sufficient. To change the labeling requirements to “lab waste” or a similar statement would add to confusion on the scientific community’s part. We recognize the fact that small containers are difficult to label with these words. An acceptable alternative would be to allow for attaching tags to small containers or allowing them to be placed into a bag which a label could sufficiently be affixed.

In addition if the EPA were to change the labeling requirements to “lab waste” or some other identifier, as some commenters have suggested, but not include applicability of the laboratory specific regulations to the remainder of the facility there would in essence then be two labeling protocols which would result in major confusion and increase the likelihood of a non-compliant event.

Question: *How often do laboratories accumulate more than 55-gallons of waste in their SAA ?*

Comment: Accumulation of greater than 55-gallons of hazardous waste or 1 quart of acutely hazardous waste is an issue for some laboratories where several iterations of the same test occur multiple times daily and which require large volumes of chemicals. This may indeed be a weekly event for some laboratories. The current regulatory framework may be interpreted differently regarding this requirement. Is it 55-gallons of hazardous waste or 1 quart of acutely hazardous waste per laboratory or per process within a laboratory ? If this requirement is per process (i.e. per individual laboratory test) rather than per laboratory then the issue is not significant. The EPA could clarify this through guidance documents rather than rulemaking.

Question: *What, if any, difficulties do environmental health and safety personnel have responding to waste pick-up calls, e.g., within the three day time limit ? How would a longer time-frame for removal impact the cost of waste management and the ability to protect human health and the environment ?*

Comment: If the above 55-gallon threshold applies per laboratory and not per process the issue of removing waste within 3-days (72-hours) becomes more burdensome. At times a laboratory may need to balance the 72-hour rule with employee health and safety concerns. In a laboratory setting complex mixtures and uncommon chemicals are used and managed daily. At times the personnel responsible for waste pick-up may need to perform research that may take greater than 72-hours to ascertain the appropriate way to handle and transport the waste from the laboratory to the 90 or 180-day accumulation area safely. A revision of this rule to allow for a minimum of 5 business days would allow for greater diligence in picking up the waste and actually increase protection to human health and the environment.

Question: How would a longer time-frame for removal impact the cost of waste management and the ability to protect human health and the environment ?

Comment: A longer time-frame for removal of waste from a laboratory to the 90 or 180 day accumulation area would not have a significant impact on the cost of waste management. It may lead to slightly lower labor costs in that it may eliminate what would have otherwise been overtime pay to remove waste within the current 72-hour time-frame. In addition there should be no negative impact to human health or the environment in extending the time-frame to five business days. The rationale behind this is that laboratories are well suited and designed to hold and manage chemicals appropriately. It is after all the main function of the building and its supporting infrastructure. This may be substantially different than a manufacturing facility which may not be as well suited to handle chemicals in various locations, hence the reasoning for the original 72-hour time-frame.

Additional Satellite Accumulation Area Comment: Additional concerns relating to satellite accumulation areas are as follows: what constitutes at or near the point of generation for a laboratory setting, locating SAA's in a clean room, and shared laboratories and waste streams. If the EPA redefines where the initial waste determination is to be made and allows the environmental compliance professionals to make the determination at the 90 or 180-day accumulation area the following comments essentially become moot. However, these comments are made in the event EPA does not make that regulatory change.

There has been significant divergence in both the regulated community as well as by the regulators as to what constitutes at or near the point of generation. In addition to the conflicting interpretations laboratory personnel must deal with shared lab space, small laboratories not suited for waste accumulation, clean room environments, etc. Many laboratories are set-up with service corridors where waste could safely be stored under lock and key, but this may not meet certain regulators interpretations of at or near the point of generation. EPA should clarify that in a laboratory setting the use of appropriate locked cabinets (for instance flammable cabinets) within a service corridor is an acceptable means of waste management. This commenter would also urge the EPA to consider allowing secure facility's (i.e. those containing a 24-hour security presence with closed circuit monitoring) be considered a secure facility with no restrictions on the location of SAA's within the facility.

There is also an opportunity for significant cost savings if the EPA were to allow transferring waste from one SAA to another for consolidation prior to reaching the 90 or 180-day accumulation area. This would allow labs that generate similar wastes to utilize a single point of storage rather than maintaining multiple SAA's which actually results in a greater probability of an accident. This proposed change would actually add protection for human health and the environment.

Question: What types of treatment, other than neutralization, are laboratory personnel currently performing or would like to perform ? What would be the benefits of the desired types of treatment ?

Comment: Industrial research and development centers are well prepared to perform numerous types of treatment to render hazardous waste safe for shipment and/or disposal. As previously stated the population of employees consists of extremely educated personnel in both science and engineering disciplines. Laboratories often run into issues when attempting to dispose of waste that may not be fully reacted and balancing RCRA regulatory requirements with Department of Transportation regulatory requirements. Often times the cost associated with properly packaging waste for off-site shipment is extremely expensive, when a simple treatment method could have been applied to the chemistry of the waste at the facility therefore eliminating or reducing the hazard. We would strongly urge the EPA to look at all types of treatment that may safely be performed in a laboratory scale situation. These may include peroxide deactivation, oxidation, stirring, hydrolyzation, decomposition, and neutralization. A threshold quantity for treatment is proposed to be the treatment of any waste stream in less than 55-gallon quantities at any single point in time.